



**MICROCIRCUIT DATA SHEET**

**MDLM161-X REV OBL**

Original Creation Date: 08/15/95  
Last Update Date: 02/17/97  
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**HIGH SPEED DIFFERENTIAL COMPARATOR**

**Industry Part Number**

LM161

**NS Part Numbers**

LM161H-SMD\*  
LM161J-SMD\*\*

**Prime Die**

LM161

**Controlling Document**

5962-8757203IA\*, CA\*\*

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**Processing**

MIL-STD-883, Method 5004

**Quality Conformance Inspection**

MIL-STD-883, Method 5005

Subgrp	Description	Temp ( °C)
1	Static tests at	+25
2	Static tests at	+125
3	Static tests at	-55
4	Dynamic tests at	+25
5	Dynamic tests at	+125
6	Dynamic tests at	-55
7	Functional tests at	+25
8A	Functional tests at	+125
8B	Functional tests at	-55
9	Switching tests at	+25
10	Switching tests at	+125
11	Switching tests at	-55

## Electrical Characteristics

### DC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)  
DC: V2+ = 5V, V+ = +10V, V- = -10V

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Icc	Supply Current	V2+ = 5.5V				18	mA	1, 2, 3
		V2+ = 7V, V+ = +16V, V- = -16V	2			21	mA	1, 2, 3
I+	Supply Current	V2+ = 5.5V				4.5	mA	1, 2, 3
		V2+ = 7V, V+ = +16V, V- = -16V	2			9.3	mA	1, 2, 3
I-	Supply Current	V2+ = 5.5V			-10		mA	1, 2, 3
		V2+ = 7V, V+ = +16V, V- = -16V	2		-15		mA	1, 2, 3
Voh (B)	Logical "1" Output Voltage	V2+ = 4.5V, Isource = -1mA			2.4		V	1, 2, 3
Voh (A)	Logical "1" Output Voltage	V2+ = 4.5V, Isource = -1mA			2.4		V	1, 2, 3
Vol (A)	Logical "0" Output Voltage	V2+ = 4.5V, Isink = 10mA				0.4	V	1, 2, 3
Vol (B)	Logical "0" Output Voltage	V2+ = 4.5V, Isink = 10mA				0.4	V	1, 2, 3
Ist1 (A)	Strobe "1" Input Current	V2+ = 5.5V, Vstrobe = 2.7V				200	uA	1, 2, 3
Ist1 (B)	Strobe "1" Input Current	V2+ = 5.5V, Vstrobe = 2.7V				200	uA	1, 2, 3
Ist0 (A)	Strobe "0" Input Current	V2+ = 5.5V, Vstrobe = 0.4V			-1.6		mA	1, 2, 3
Ist0 (B)	Strobe "0" Input Current	V2+ = 5.5V, Vstrobe = 0.4V			-1.6		mA	1, 2, 3
Vst1 (A)	Strobe "1" Input Voltage	V2+ = 4.5V, Isink = 6.4mA	1		2		V	1
			1		2.4		V	2, 3
Vst1 (B)	Strobe "1" Input Voltage	V2+ = 4.5V, Isink = 6.4mA	1		2		V	1
			1		2.4		V	2, 3
Vst0 (A)	Strobe "0" Input Voltage	V2+ = 4.5V, Isource = 0.5mA	1			0.8	V	1, 2, 3
Vst0 (B)	Strobe "0" Input Voltage	V2+ = 4.5V, Isource = 0.5mA	1			0.8	V	1, 2, 3
Ios (B)	Output Short Circuit Current	V2+ = 5.5V, Vout = 0			-55	-18	mA	1, 2, 3

## Electrical Characteristics

### DC PARAMETERS (Continued)

(The following conditions apply to all the following parameters, unless otherwise specified.)  
DC:  $V_{2+} = 5V$ ,  $V_+ = +10V$ ,  $V_- = -10V$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Ios (A)	Output Short Circuit Current	$V_{2+} = 5.5V$ , $V_{out} = 0$			-55	-18	mA	1, 2, 3
Iib	Input Bias Current	$V_{in} = 0V$				20	uA	1, 2, 3
Vos	Input Offset Voltage				-3	+3	mV	1
					-5	+5	mV	2, 3
Ioffset	Input Offset Current	$V_{in} = 0V$			-4	+4	uA	1
					-8	+8	uA	2, 3
Vstc (A)	Strobe Clamping Voltage	$V_{2+} = 5.5V$ , $I_{in} = -18mA$			-1.5		V	1, 2, 3
Vstc (B)	Strobe Clamping Voltage	$V_{2+} = 5.5V$ , $I_{in} = -18mA$			-1.5		V	1, 2, 3

### AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)  
AC:  $V_{2+} = 5V$ ,  $V_+ = 10V$ ,  $V_- = -10V$ ,  $R_l = 2.43K$  Ohms,  $C_l = 15pF$

tPHL	Propagation Delay Time	$V_{in} = \pm 100mV$ Step	3			20	nS	7
tPLH	Propagation Delay Time	$V_{in} = \pm 100mV$ Step	3			20	nS	7
	Delay Between Output A and Output B	$V_{in} = \pm 100mV$	3			5	nS	7

- Note 1: Parameter tested go-no-go only.  
Note 2: Strobe 1 and Strobe 2 MUST BE LOW.  
Note 3: Bench test refer (SG)RPI-3-383.